Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Implementing Kari's Law and Section 506 of RAY BAUM'S Act	)	PS Docket No. 18-261
	)	
	)	
Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems	)	PS Docket No. 17-239
	)	

To: The Commission

REPLY COMMENTS OF THE BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

Joseph P. Benkert, P.C.
8506 Porcupine Pointe
Parker, CO 80134-2786
(303) 948-2200

Its Attorney

January 30, 2019

Summary

Caller location information is used by the 9-1-1 system to route the call to the PSAP which can dispatch First Responders to the caller's location, by the PSAP to dispatch First Responders to the caller's location, and by the First Responders to locate the caller at the site of the incident. With an understanding of the 9-1-1 and PSAP operations and issues, it is clear that the Kari's Law, RAY BAUM's Act and the proposed rules will improve emergency response.

The requirement that MLTS permit a caller to reach a PSAP by dialing 9-1-1, without first dialing an additional number or code to access an outside line, will assure that a caller using on MLTS can reach the PSAP even if the caller is excited by the exigent circumstances with which he or she is confronted. Thus Direct Dialing Requirement should include the requirement that the call be routed to the PSAP serving the caller's location rather than the PSAP serving the enterprise's main office or location of the core MLTS CPE.

The requirement for On-site Notification allows personnel at the caller's location to provide assist the caller or provide aid to an injured party pending arrival of First Responders, and prepare for the arrival of First Responders. Provision of Interior Location Information to the PSAP with the dispatchable location allows First Responders to quickly locate the caller upon arrival at the building served by the MLTS.

Interior Location Information should be included in the dispatchable location where (i) the MLTS serves multiple buildings or facilities with the same street address, (ii) multiple floors within a building, (iii) an area in excess of 7,000 square feet, or (iv) an area with 10 or more separately secured (lockable) units. Separate Interior Location Information should be provided for each separate building, each floor of a building, and each 7,000 square feet or portion thereof

of a building, floor, or area, provided that an area for which a dispatchable location is provided should not include more than 10 separately-lockable rooms or areas.

The MLTS 9-1-1 rules must apply to all types of MLTS, contrary to the arguments of some parties. Uniform application of the rules is necessary to avoid providing a market advantage to some types of MLTS, or providing loopholes for MLTS manufacturers, vendors, operators or customers to evade compliance with the rules.

Existing MLTS systems should also be required to comply with the MLTS 9-1-1 rules, *i.e.*, no MLTS should be grandfathered. However waivers should be available to MLTS such as key systems which cannot comply with the rules upon a showing that replacement of the MLTS with one capable of complying with the rules would work a financial hardship on the customer/user. Any waiver application making a financial hardship showing should also include a commitment and plan to replace the MLTS by a date certain.

While some MLTS stakeholders argue that MLTS providers or customers are in the best position to determine whether On-site Notification is necessary, and the granularity of location information to be provided PSAPs; it is PSAPs and First Responders who are in the best position to appreciate the requirements for effective Emergency Response and make these determinations. However as discussed in BRETSA's Comments herein, there may be situations in which waivers of the proposed rules would best serve the interest of Public Safety, and State and local public safety authorities should be authorized to grant or deny such waivers because local facts will be determinative. In addition, it may be appropriate to grant waivers subject to conditions such as training requirements for enterprise personnel or contractors who will respond to emergencies at premises served by the enterprise's MLTS.

Kari's Law provides that nothing in the Act is intended to alter the authority of State commissions or State or local agencies with authority over emergency communications, if the exercise of such authority is not inconsistent with the Act. The Commission should interpret and clarify this provision, and specifically find that State laws applying the requirements of Kari's Law to existing MLTS systems would not be inconsistent with the Act. The Commission should also clarify that waivers of the rules by state and local agencies would not be inconsistent with the Act.

The Commission should make a finding as to public expectations regarding 9-1-1 which is consistent with PSAPs' experience, and which would support civil liability under state statutory or common law for MLTS stakeholders who fail to comply with the rules.

The types of devices which will be used for personal communications and which the public expects or will expect can be used to call 9-1-1 are known, as are the location technologies and types of voice and text communications. The Commission should initiate a proceeding to determine the cost of incorporating these technologies in devices for manufacturers and users. The Commission should mandate that these technologies be included in devices used for personal communications so that the devices have native location capabilities and the native capability to connect voice calls and transmit text messages to 9-1-1. In addition, over-the-top apps should be required to hand off calls and text messages addressed to 9-1-1 to be transmitted by the device's native capabilities. This will allow devices to provide location information when used with MLTS, or independently of MLTS when untethered from an MLTS. It will also provide consistent quality and performance.

Commenters contend that the Direct Dialing requirement should not apply to outbound-only calling systems such as Skype. While outbound-only calling systems are said to be unable

to provide a call-back number, it is more important that people be able to reach 9-1-1 in an emergency than that a PSAP can reconnect a dropped call. Improved location information may ameliorate some concern with the lack of a call-back number. 9-1-1 calls are outbound calls, and it is counterintuitive that they cannot be made over outbound-only calling systems. The fact that Microsoft has enabled 9-1-1 calling with Skype in some countries demonstrates that 9-1-1 calling can be provided.

The Commission should adopt rules even if some MLTS cannot comply with them. Adopting MLTS 9-1-1 rules with which even the most technologically outdated MLTS systems can comply would defeat the very purpose of the rules.

While SMS text-to-911 cannot fully comply with the location requirements of the rules, RTT cannot match the coverage areas of SMS text messaging, and RTT sessions will increase the number of concurrent sessions to which PSAPs must subscribe and significantly increase PSAP costs. The Commission should consider whether RTT should supplement or supplant SMS text-to-911.

BRETSA concurs in the importance of test calls to confirm that MLTS emergency call configuration can work, however MLTS installers should contact PSAPs on an administrative line to coordinate test calls, so as not to interfere with PSAP observations. In the long run, a testing protocol should be developed which would not require that 9-1-1 test calls be terminated all the way to the PSAP. The protocol should test system or device configuration with calls terminated at the NG9-1-1 Data Complex to avoid interference with PSAP operations.

Table of Contents

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Implementing Kari's Law and Section 506 of RAY BAUM'S Act	)	PS Docket No. 18-261
	)	
	)	
Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems	)	PS Docket No. 17-239
	)	

To: The Commission

REPLY COMMENTS OF THE BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

The Boulder Regional Emergency Telephone Service Authority ("BRETSA"), by its attorney, hereby submits it's Reply Comments on the Commission's September 26, 2018 Notice of Proposed Rulemaking in the above-referenced proceeding ("NPRM").

I. Location and 9-1-1 Calls.

Caller location information is used for three essential purposes: (i) by the 9-1-1 system to route the call to the PSAP with authority and radio frequencies/facilities to dispatch First Responders to the caller's location,[1] (ii) by the PSAP to dispatch First Responder's to the caller's location, and (iii) by First Responders to locate the caller at the site of the incident.[2]

[1] The PSAP serving the area in which the caller is located will not only have the authority and ability to dispatch First Responders, but will also be uniquely knowledgeable of the complement of First Responder agencies in whose response area the caller is located, the business rules regarding the units to dispatch, and the First Responder units on-duty and available for dispatch. The PSAP will also have governmental immunity in processing the 9-1-1 call. The PSAP serving the caller's location will also uniquely have knowledge of the local ordinances as well as state law, which will determine the appropriate response to 9-1-1 calls for police assistance. For example, the nature of the complaint, the applicable code and agency business rules may dictate emergency response to the caller's location, dispatch of officers or of volunteers to take a report, or direction to the caller to file a report at a Police Department, Sheriff's Office, substation, or online. The importance of "local knowledge" of the PSAP cannot be gainsaid. Local knowledge includes general familiarity with the area the PSAP serves, the types of calls received (PSAPs serving coastal areas, Midwest agricultural areas, mountainous and forested areas, and highly urbanized areas, for example, would each likely receive types of calls that PSAPs serving other area would never or rarely receive. Local knowledge also includes locations and individuals recently or frequently the subject of 9-1-1 calls, and CAD premises data and flags indicating recent incidents, storage of hazardous materials, etc.

[2] "Caller location" is used herein even though the caller and incident may be at different locations.

A. 9-1-1 Call Routing.

Location information is most critical for routing the call to the correct PSAP. First Responders cannot be dispatched until the call reaches the PSAP which serves the caller's location, and the PSAP determines the nature and location of the emergency.[3] A PSAP to which a call is misrouted will begin interviewing the caller until learning from Phase II ALI (if a wireless call) or information provided by the caller that the call has been misrouted. Upon learning that a 9-1-1 call it has received has been misrouted, a PSAP will *transfer* the call to the PSAP which can dispatch the call, (i) if both PSAP are located in the same state, (ii) the state 9-1-1 system provides the ability to transfer calls between PSAPs, and (iii) *the PSAP which received the misrouted call can determine the caller's location and identify the PSAP which serves that location.* A PSAP which has received a misrouted call will call the correct PSAP on a 10-digit administrative (non-emergency) number and *relay* the call information, if (i) the PSAPs are located in a state which does not support the transfer of calls between PSAPS, or the PSAPs are located in different states, (ii) *the PSAP which received the misrouted call can determine the caller's location and identify the PSAP which serves that location, and (iii) identify a 10-digit phone number for the correct PSAP*.[4]

When a misrouted call is transferred to the correct PSAP, the dispatcher in the correct PSAP must begin interviewing the caller anew regarding the nature and location of the emergency, resulting in additional delay in the dispatch of First Responders.[5] When caller

[3] Phase I misrouting of 9-1-1 calls, some misrouting of VoIP calls based on outdated registered location, and misrouting of MLTS 9-1-1 calls where premises in multiple jurisdictions (PSAP service areas) are served by a single MLTS, continue to delay emergency response.

[4] When calls are transferred, they arrive at the second PSAP on 9-1-1 trunks or an ESInet so that ANI/ALI data is automatically populated in the PSAP 9-1-1 phone and Computer Aided Dispatch ("CAD") system, the CAD system automatically displays maps and information regarding the caller's location, the call is recorded, and with some CAD systems data pertaining to the location and caller can be transmitted to responding units.

[5] The PSAP will validate ALI data, if available, and caller-provided location, if available, against each other to verify the caller's location and interdict fraudulent 9-1-1 calls.

information is relayed to the correct PSAP, the requirement for the First PSAP to act as a "go-between" for the caller and correct PSAP also delays dispatch. Dispatch can be significantly delayed where ALI data is unavailable or imprecise (as with Phase I ALI), the caller does not know his location, or the PSAP to which the call has been misrouted (i) does not realize the call has been misrouted, (ii) cannot identify the caller's location (more difficult when the caller is in another jurisdiction), and/or (iii) cannot determine the PSAP serving the caller's location or locate a telephone number for that PSAP. In addition, administrative lines are answered by PSAPs on a secondary basis.

A PSAP to which a 9-1-1 call is misrouted may also provide Emergency Medical Dispatch ("EMD," coaching the caller in diagnosis and provision of First Aid), until the call is transferred.[6] Depending upon PSAP policy, business rules, and the time required to determine the call has been misrouted, the call may be transferred prior to initiating EMD, as soon as the correct PSAP to handle the call is identified whether or not EMD has been completed, or after completing EMD. When EMD is completed prior to transferring the call, there is yet additional delay in transfer of the call to the correct PSAP and dispatch of First Responders.

As relevant to this proceeding, the ALI data in the ANI/ALI database for devices connected to an MLTS is generally the street address at which the trunk lines or fiber transmission facility connects to the MLTS core PBX or IP-PBX CPE, or the main address of the MLTS customer. That address may be used to route 9-1-1 calls even when the MLTS serves devices in multiple buildings or facilities located at different addresses, and even at addresses located in jurisdictions of other PSAPs and in other states. This can result in misrouting of 9-1-1 calls.

[6] Each PSAPs EMD-system is approved by a physician, who may modify the diagnostic and First Aid instructions. There may be concern with provision of EMD approved in one jurisdiction to a subject located in another jurisdiction.

B. Dispatch of First Responders.

Prior to dispatching First Responders, the PSAP which serves the caller's location must interview the caller to learn *and confirm* the nature and location of the emergency or other matter being reported and the appropriate action in response to the call. If dispatch of First Responders is the appropriate action, the PSAP will dispatch the appropriate available units. While the PSAP will dispatch First Responders as soon as it has confirmed that Emergency Response is required, interviewing the witness and determining the appropriate action can take some time.

While one might assume that a caller would be able to accurately provide the PSAP with his or her location in a building served by an MLTS and other information pertinent to the emergency being reported; callers confronted with an emergency are not always calm and collected. BRETSA has previously filed with the Commission a transcript of an actual 9-1-1 call,[7] and the audio recording of the call is available on the Internet,[8] in which a caller reporting that a friend had threatened suicide, and who appeared relatively calm, (i) initially provided the dispatcher his previous address, before realizing his error and giving his current address, (ii) paused to recall his friends last name, and (iii) gave his friend's phone number instead of his number, only realizing the mistake when asked for his friend's phone number. This example of how someone calling 9-1-1 in an emergency may be affected by the circumstances is not atypical, and the impact of stress and excitement or panic of the circumstances can be even more pronounced. Consider a caller confronted with someone who has collapsed, is choking or

[7] See Comments of Boulder Regional Emergency Telephone Service Authority in CG Docket No. 16-145, In the Matter of Transition from TTY to Real-Time Text Technology, Exhibit No. 1, "Suicide by Semi" 9-1-1 Call Transcript, filed July available at https://ecfsapi.fcc.gov/file/10722185086488/BRETSA Comments CG 16-145 RTT GN 15-178 filed 160722.pdf at 1-3 (last visited January 29, 2019).

[8] https://www.youtube.com/watch?v=XeK_1PjoKzo (last visited January 29, 2019).

displaying symptoms of a heart attack, or with a fire, physical assault, an active shooter situation or other emergency *in the caller's presence*.[9]

In dispatching First Responders, the PSAP will provide as precise information as to the caller's location as is available. The ANI/ALI data for a 9-1-1 call may include the interior location of a caller in a large building if (i) the originating telecommunications service provider ("OSP") provides service directly to a tenant of the building, *and* includes the tenant's unit number in the address submitted to the ALI database, (ii) the Operator or customer of an MLTS subscribes to PS-ALI (Private Switch-Automatic Location Information) or a similar service, or (iii) the caller is able to provide the PSAP his location in the building. [10]

If the interior location of a caller in a large building is provided by the PSAP, dispatched Fire and Medical First Responders will often review "Preplans"[11] while in route to the incident to determine the most expeditious entrance and path to the caller's location. Because Law First Responders do not typically travel in teams, they are not able to review preplans while driving to the scene of the incident.

C. First Responder Location Of The Caller.

When First Responders arrive at a significant building,[12] they must locate the caller before they can render the aid required. Focusing only upon medical emergencies, (i) a person can bleed to death in minutes, (ii) brain cells start dying after just 5 minutes without oxygen,

[9] The unique skill set required of a 9-1-1 dispatcher includes the ability to calm a caller, and to distill the disjointed and confused information provided by a caller into a concise statement of the relevant facts for the First Responders.
[10] BRETSA has been advised by ESInet and Originating Service Providers that geospatial routing is not being used in any ESInet/NG9-1-1 implementation in the U.S. to date. BRETSA understands that in an NG9-1-1 environment, ALI (service addresses) for fixed services will continue to be supplied via database for the foreseeable future.
[11] Fire First Responders develop Preplans by removing from floor plans of a premises information extraneous to emergency response, highlighting the location of the exterior sprinkler valves to which tankers will connect to increase the water supply, entrances, elevators, locations for staging and positioning First Responder units, etc. Preplans are prepared for large buildings and facilities, not for smaller buildings including single family residences.
[12] By "significant building," BRETSA refers to a building(s) large and/or complex enough that it would take First Responders, provided only with the street address of the building(s), more than a few minutes locate an unresponsive caller within the building.

such as from smoke inhalation, carbon monoxide poisoning, heart attack, choking, drowning, drug overdose, stroke, or suicide,[13] (iii) after 6 minutes, brain damage is very likely, and (iv) irreversible brain damage is a certainty after 10 minutes without enough oxygen. During heart attacks when the heart does not get enough oxygen, heart tissue dies causing permanent damage.

When First Responders arrive on the scene without knowing the interior location of the caller, seconds and minutes quickly tick by while the First Responders search the buildings, floors, separate offices, apartments, hotel rooms, etc. for the caller. BRETSA notes that irony that people who begin choking or feeling ill will sometimes leave the company of others who could help them, apparently out of embarrassment. They will go into an office, bathroom or other location where they will be alone to try and resolve their issue themselves. If they try to call 9-1-1 for help before losing consciousness, they may be unable to speak (*e.g.*, if they are choking).

II. Kari's Law, RAY BAUM's Act, And The Proposed Rules, Improve Emergency Response.

Kari's Law, RAY BAUM's Act and the Commission's proposed rules address issues applicable to MLTS to improve Emergency Response.

A. Direct Dialing.

Kari's Law requires that MLTS be configured with the default capability of reaching a PSAP by dialing "9-1-1" without the requirement to first dial another number to access an outside line ("Direct Dialing"). The incident which prompted enactment of Kari's Law involved a child not knowing to dial a number to access an outside line before dialing 9-1-1. However even adults confronted with the circumstances of an ongoing struggle and murder, or other

[13] Suicidal individuals will sometimes call 9-1-1 or a suicide hotline, but often will not identify their location.

emergency, might not know to dial a number to access an outside line before dialing 9-1-1, or might know but fail to do so in the excitement or panic of the situation.

Kari's Law and the Commission's proposed implementing rules require MLTS manufactured, imported, sold, leased, installed, managed or operated in the U.S. to be configurable, and configured by default, to provide Direct Dialing.[14] Kari's Law and the proposed rules apply to MLTS manufactured, imported, offered for first sale of lease, first sold or leased, or installed after February 16, 2020. Commenters herein state that most or all MLTS in use in the U.S. today can be configured to provide Direct Dialing, with the possible exception of key systems.[15] The Commission should therefore require that all MLTS comply with the Direct Dialing requirement and not grandfather any MLTS from that requirement. Any key system or other MLTS currently in use which cannot comply with the requirement should be granted a waiver on a case-by-case basis. The showing required to obtain a waiver should include demonstration that upgrading the MLTS to a system capable of meeting the requirements of Kari's law would work a financial hardship on the customer/user. Any application or request for such a waiver should be required to include a commitment and plan to replace the MLTS by a date certain.

B. On-site Notification.

Kari's Law also requires that MLTS subject to the Act be configured to provide a notification to a central location at the facility where installed, or to another person or

[14] 47 U.S.C. §623(a)-(b).

[15] Avaya is to be commended for the leadership role it has played in education and promoting legislation regarding Direct Dialing to prevent tragedies such as Kari Hunt's. BRETSA representatives have attended meetings where representatives of Avaya have made presentations regarding the direct dialing issue, and stated that most or all MLTS in use today are configurable to provide Direct Dialing. NCTA states that "NCTA members have already voluntarily configured most, if not all, of the MLTS equipment they are deploying so that calls to 911 can be completed without dialing a prefix. NCTA Comments, at 2. Red Sky states that based on technology that is readily available and affordable today, there is no technical or financial reason to grandfather any MLTS from the Kari's Law Requirements, with the possible exception of electromechanical key systems. Red Sky Comments, at 10.

organization ("On-site Notification"), if the system can be so-configured. The Commission proposes to require the same caller-location information be provided with the On-site Notification as is provided to the PSAP. The importance of this provision cannot be understated.

When an individual calls 9-1-1 to report that the caller or another person is injured or ill, the PSAP will provide EMD. If CPR is required, it should be noted that even a fit First Responder is unable to continue to provide CPR for more than several minutes at a time, and First Responders take turns providing CPR to a subject. The PSAP will also ask the caller, *inter alia*, to (i) unlock the door to their home, apartment or other unit in which they are located, and (ii) where they are located in the unit, so that First Responders can reach them without delay. The PSAP will also ask if others are present who can go to the street to flag down the First Responders, lead the First Responders to the location of the caller, clear the hallways and hold an elevator for the First Responders, as applicable, to minimize delay in the First Responders reaching the caller/subject.

On-site Notification will enable individuals already at the caller's location to respond to the caller's location much more quickly than First Responders; even while the caller is still on the phone with the PSAP. These individuals can provide or assist in the provision of First Aid (if the individuals are not trained in First Aid, the PSAP will provide EMD), flag down First Responders and guide them to the caller's location, hold an elevator for the First Responders, and otherwise expedite the First Responders reaching the individuals in need of aid. If the location of the caller within the building is not provided to the PSAP nor with the On-site Notification, on-site personnel can begin searching for the caller before First Responders arrive.

C. Interior Location Information.

PS-ALI, and other means of including information regarding the location of a caller within a building ("Interior Location Information) in the ALI data for a 9-1-1 call made from an

MLTS have long been available. Yet few MLTS 9-1-1 calls received by BRETSA-affiliated PSAPs include Interior Location Information. MESB reports that 14 years after Minnesota adopted a statute requiring MLTS serving residential customers, hotels and motels, educational facilities, shared residential facilities and businesses connected to the PSTN to provide Interior Location Information, or in some cases alternative means of directing First Responders to the caller's location within the building; non-compliant MLTS systems continue to be sold and implemented.[16] Approximately one-half the 9-1-1 call errors reported by the Twin Cities metropolitan area PSAPs are related to business MLTS and VoIP systems, according to MESB.[17]

RAY BAUM's Act requires the Commission to open a proceeding to consider adopting rules to ensure the dispatchable location of the caller is conveyed with a 9-1-1 call, regardless of technology used. The Act defines "dispatchable location" as "the street address of the calling party, *and additional information such as room number, floor number, or similar information* necessary to adequately identify the location of the calling party."[18] The Commission is addressing in this proceeding provision of such additional, *interior*, location information beyond the street address with calls from MLTS and other technologies and platforms except wireless.[19] The Commission's proposed rules implementing RAY BAUM'S Act applicable to MLTS (and other non-CMRS platforms) are to be effective February 16, 2020.

In the context of MLTS, Interior Location Information identifies for First Responders the correct building floor, unit or area served by the MLTS in which the caller is located. This

[16] MESB Comments at 2-3.
[17] MESB Comments at 2.
[18] RAY BAUM'S Act§ 506(c)(2) (*Emphasis added*).
[19] BRETSA continues to be concerned with the statements that "dispatchable location" will indicate the "right door to kick-in," because it does not believe available technology supports such precise and reliable location data based upon proximity to RF emitters. First Responders and innocent members of the public have been injured and killed when First Responders have "kicked-in" the wrong door, *e.g.*, due to swatting and incorrect information or errors in conducting drug and other police raids. BRETSA believes if dispatchable information is provided a PSAP, it should provide the PSAP and First Responders a fair understanding of the range of interior locations or units in which the caller may be located rather than artificially resolving the location to a single unit for regulatory purposes.

substantially reduces the time required for First Responders to reach the caller's location vis-à-vis when First Responders must search the premises for the caller. The Commission's proposal to require the same Interior Location Information be provided with On-site Notification also means that first aid or other assistance to the caller can be commenced even sooner by individuals already on-site.

BRETSA submits that the requirement for Local Notification should be that an MLTS shall be configured to transmit 9-1-1 calls originating on the MLTS to the PSAP serving the geographic area in which the caller is located. It is essential that where MLTS serve buildings or facilities in areas served by separate PSAPs, 9-1-1 calls from each building are routed to the correct PSAP. The misrouting of calls to a PSAP which does not serve the area in which the caller is located can substantially delay dispatch of First Responders, as discussed at Section I.A. above. This requirement would also prohibit the transmission of calls to regional or national call centers prior rather than directly to the appropriate PSAP. Regional or national call centers are not a permissible alternative to proper configuration of an MLTS. Where the MLTS serves buildings or facilities at different addresses within the jurisdiction of the same PSAP, it is also essential that the correct address of the building in which the caller is located, rather than the building where the MLTS core CPE is located, for example, be included in the ALI data for the call. Otherwise First Responders will be dispatched to the wrong address.

Interior Location Information should be included in the dispatchable location where (i) the MLTS serves multiple buildings or facilities with the same street address, (ii) multiple floors within a building, (iii) an area in excess of 7,000 square feet, or (iv) an area with 10 or more separately secured (lockable) units.[20] This "bright line" rule includes premises served by an

[20] The foregoing discussion of the benefits of Interior Location Information in the context of actual First Responder experience demonstrate that AT&T's arguments that station level dispatchable location and central notification is of

MLTS of such a size or with such characteristics that First Responder's search for the caller would sufficiently delay their rendering aid so as to materially and adversely impact outcomes.

A separate dispatchable location shall be provided for each separate building, each floor of a building, and each 7,000 square feet or a portion thereof of a building, floor, or area, provided that an area for which a dispatchable location is provided shall not include more than 10 separately-lockable rooms or areas. Greater granularity of dispatchable locations is recommended.[21] We note that an MLTS serving an enterprise occupying less than 7,000 square feet within a larger building, served directly by an OSP (as opposed to obtaining service from an MLTS operated or managed by building management), should have its street address, floor and unit number submitted to the ANI/ALI database by the OSP.

In its comments, Red Sky noted the impact of offices with *closed* doors on the time required for First Responders to search a given area.[22] BRETSA defines separately secured units as "lockable" doors. In the case of an apartment or condominium, these would be separate units. In the case of an office building, these could be separate suites served by an MLTS operated by building management, or separate offices with lockable doors within a suite served by an MLTS whether an executive suite, a professional services firm occupying multiple floors of the building, or an enterprise occupying the entire building. In the case of an industrial or mixed-use building, it would include any separate rooms or enclosed areas with a lockable door or gate.

---

limited value, dispatchable location beyond street address would not help first responders identify where help is needed, and 40,000 square feet is the threshold for dispatchable location, are without merit. AT&T Comments at 4-5. It should also be noted that in the statistics AT&T cites, "Small Businesses" are defined as businesses with less than 500 employees. U.S. Small Business Administration, Office of Advocacy, 2018 Small Business Profile, 1, *available at* https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-US.pdf (last visited January 27, 2019).

[21] A facility with exterior locations served by an MLTS would also be subject to the dispatchable location requirement, would require a separate "Interior Location Information" for each 7,000 square feet, and be subject to the limitation on 10 separately secured units within a dispatchable location.

[22] Red Sky Comments, at 18.

Locked doors present a particular concern because of the time required to find someone with a key to the door(s), and the impact on search time if only one person is available with a key or keys to open the doors, if there is not a master key and they must identify the correct key to open each door, or no one is present who can unlock the doors.

First Responders can (and do) open locked doors without a key, but doing so often causes damage to the premises and prevents re-securing the unit until the door or lock can be replaced. In addition, First Responder agencies are generally responsible for repairs of damage First Responders cause in the course of searching premises for callers, particularly to gain entry to areas where it turns out the caller is *not* located. The time required to make forced entry to locked rooms will also slow the search. First Responders confronted with locked doors at a location from which a 9-1-1 call was made from which no response is forthcoming to their ring, knock or call, do not know if the unit is vacant or the caller is incapacitated, face a difficult dilemma. This is particularly the case if the caller was or became non-responsive when calling 9-1-1. Supervisory personnel are often consulted before forcing entry to a locked room or area, and location of the caller is generally delayed when locked doors are encountered in the area to be searched for the caller.

III. The MLTS 9-1-1 Rules Must Apply To All Types of MLTS.

The MLTS 9-1-1 rules must apply to all types of MLTS. It has been stated by MLTS manufacturers that most or all MLTS systems in use today can be configured to permit direct dialing of 9-1-1,[23] and that MLTS systems can meet the requirements Internal Location Information and On-site Notification requirements either natively, or through optional or third-

[23] See fn. 15, above.

party add-ons to their MLTS. Red Sky and Blue IP state that the Commission should consider requiring enterprises to bring their existing systems into compliance with the proposed rules.[24]

BRETSA concurs that the relevant portions of the proposed rules should apply to *all* MLTS currently in service as of the date of the Commission's Order adopting the rules and subsequently installed. Waivers should be granted upon a showing that an MLTS, such as a key system, cannot be brought into compliance with the rules, and that replacing the MLTS with a modern system would work a financial hardship on the customer/user. Any application or request for such a waiver should be required to include a commitment and plan to replace the MLTS by a date certain.

Ring Central argues that the rules should "only apply onsite at local facilities where MLTS is deployed and the owner controls the network."[25] TIA similarly states that the Commission should more narrowly interpret the term MLTS, apparently arguing that the terms "network … based systems" and "VoIP" as used in the 47 U.S.C. §1471(2) could not include cloud-based systems and over-the-top applications.[26] Cisco recommends a phased-approach to implementation of the rules, and that the rules should not apply to "internal communications systems."[27]

Limiting application of the rules to only specific types of MLTS would distort the market by imposing cost impacts of the rules on only certain MLTS systems. It would favor some technologies over others, coincidently the newer technologies, notwithstanding that callers to 9-1-1 are no less impacted by failures of MLTS using those technologies to provide Interior Location Information and On-site Notification than MLTS using other technologies. Kari's Law

[24] Red Sky Comments, at 10. Blue IP Comments, at 7.
[25] Ring Central Comments, at 2.
[26] TIA Comments at, 7-9.
[27] Cisco Comments, at 4, 3.

and RAY BAUM's Act do not support the narrow reading proposed. Exempting "internal communications systems" from the rules would appear to create a loophole such as to negate the statutes and rules. An MLTS in which a user must dial a number to access an outside line prior to placing a call to 9-1-1 would appear to be an internal communications system. In addition, modern telecommunications systems including IP-based systems tend to use the same physical network and devices both for internal and external communications. If a user/device can connect to the PSTN or public Internet, the system must be subject to the rules.

IV. Neither MLTS Providers Nor Customers Should Determine The Local Notification And Interior Location Information To Be Provided.

Commenters herein assert that the On-site Notification and Interior Location Information requirements should be determined by MLTS operators or customers. For example Ad Hoc argues that MLTS Operators are in the best position to determine type and granularity of location information to be transmitted to the PSAPs.[28] Similarly, ACA states that "the customer is best positioned to identify the information that would be most helpful to first responders seeking to locate a caller that places a 911 call using its MLTS."[29] However it is the PSAPs which handle calls from MLTS, and First Responders who are dispatched in response to calls from MLTS which are in the best position to determine the type and granularity of location information which will eliminate unnecessary delay in First Responders locating callers. The experience of MESB demonstrates that MLTS operators and users cannot be relied upon even to comply with *existing statutory requirements* to provide Interior Location Information at all.

Blue IP states that some MLTS customers direct 9-1-1 calls to in-house security in the first instance, and Red Sky states that it "ha[s] seen security entities in hospitals, manufacturing, and utility plants that prefer to answer 9-1-1 calls made from within their campus

[28] Ad Hoc Comments, at 12-13.
[29] ACA Comments, at 4.

environments."[30] Enterprises may prefer to have 9-1-1 calls directed to an internal number because they employ security personnel who can provide more expeditious response to emergencies, or because they want to avoid adverse publicity. In either case, MLTS customers have an obligation to their employees, customers and the public not to take actions which could endanger them.

Routing 9-1-1 calls to internal resources delays delivery of the caller information to the PSAP and dispatch of First Responders. Security personnel or other employees or agents may not be adequately trained or equipped to respond to the breadth of emergencies for which individuals might call 9-1-1. It would seem unlikely that employees or on-site contractors of MLTS customers would have the training and equipment to respond to fires, or to chemical or other hazardous discharges, which could pose a threat to neighboring properties and the public.

The nature of the emergency being reported by a 9-1-1 call cannot be discerned until the call is answered. The diversion of a 9-1-1 call to an internal number would not only delay the dispatch of First Responders, but would prevent timely activation of an Emergency Notification Services, Wireless Emergency Alert or even the Emergency Alert System if required. Answering of a 9-1-1 call and relay of call information to the PSAP by enterprise personnel or contractors lacking 9-1-1 call-taker training and unfamiliar with First Responder agency business rules, etc., is not an adequate substitute for connection of the call to the PSAP. Nor is the threat of not delivering 9-1-1 calls to the PSAP acceptable.[31]

With On-site Notification, Enterprise security personnel or other resources will be alerted when 9-1-1 is called and the location of the caller, allowing those resources to respond to the location of the caller. If the caller is still on the phone with the PSAP when these resources

[30] Red Sky Comments at 39.
[31] Verizon Comments at 3-4.

arrive, they can be directed as to performance of First Aid or other appropriate action by the PSAP.

Nevertheless, BRETSA recognizes that there are situations where on-site, trained medical First Responders at an industrial plant can provide more expeditious response to an industrial accident than First Responder agencies, for example. As discussed in BRETSA's Comments, at 3, State and local public safety authorities must have the authority to waive the Commission's MLTS rules, where reasonable and appropriate. Waiver is an essential element of a regulatory scheme,[32] and meritorious waivers of statutory requirements or prohibitions are provided through prosecutorial discretion. Waivers of requirements for 9-1-1 call delivery to PSAPs, provision of Interior Location Information, and On-site Notification will be based on local facts including, for example, the nature of the facility served by the MLTS, qualifications of enterprise personnel, location of fire stations in relation to the facility, specialized requirements for addressing incidents at the facility which First Responders are not trained and equipped to address but private responders engaged by the enterprise are trained and equipped to address. In considering waiver requests, State and local public safety officials and agencies will also have the opportunity to impose conditions on waivers, such as training requirements for enterprise personnel or contractors.

Red Sky states:

> [W]e do not believe that every MLTS user should be required to have access of an emergency call notification let alone staff to receive a notification. There are many circumstances where there is no one to consume the data and react. For example, a college with no public safety department that occupies fifty (50) buildings. Forcing the college to install and maintain a display in each building that provides the same data the PSAP already has is unnecessary.[33]

[32] WAIT Radio v. FCC, 135 U.S. App. D.C. 317, 418 F.2d 1153 (D.C.Cir. 1969).
[33] Red Sky Comments, at 3.

Even in the context presented by Red Sky, dormitories will typically have Resident Advisors or equivalent student representatives, and other buildings will have administrative personnel, to whom On-site Notifications can be provided. In the case of such a large MLTS deployment and educational institution without a security department, On-site Notifications and other emergency policies should be coordinated with local First Responder agencies in any event. As explained in Section II.B. above, On-site Notification allows individuals at or near the caller's location to locate and assist the caller, and prepare for the arrival of First Responders.

Red Sky's claim that On-Site Notification is unnecessary demonstrates why Public Safety authorities rather than MLTS vendors, operators or customers should make determinations as to the need for On-site Notification, the threshold size of the area served by an MLTS for which Interior Location Information will be required, or the minimum granularity of Interior Location Information.

Nor should the self-serving assessments of public expectations offered by MLTS stakeholders herein be credited. As MESB states, the public expects 9-1-1 to work 100% of the time and to provide perfect information regarding a caller's location regardless of the technology used to call 9-1-1.[34]

V. The Commission Should Clarify The Extent To Which State Law Is Preempted.

Kari's Law provides that nothing in the Act is intended to alter the authority of State commissions or State or local agencies with authority over emergency communications "*if the exercise of such authority is not inconsistent with this Act*."[35] The Commission should interpret this provision and clarify that State laws requiring existing MLTS systems to provide Direct Dialing, On-site Notification and Interior Location Information are not inconsistent with Kari's

[34] MESB Comments, at 3.
[35] 47 U.S.C. §623(d). *Emphasis added*.

Law, RAY BAUM's Act or the Commission's proposed rules. The Commission should also clarify that State or Local Public Safety Agencies and officials have authority to grant waivers of the MLTS 9-1-1 rules upon finding that alternative deadlines and arrangements better serve the public safety or will avoid undue financial hardship, as addressed in more detail in BRETSA's December 10, 2018 Comments herein, at 3-5.

The Commission must also make clear that the availability of penalties for violation of the MLTS 9-1-1 rules under the Communications Act and its regulations thereunder, does not preempt the states from adopting and/or enforcing statutory or common law civil liability for damages arising from acts or failures to act in violation of the rules, and criminal remedies for violation of equivalent state law.

The Commission should also make a finding of public expectations consistent with the experience of PSAPs that "[p]ublic perception is that 9-1-1 works 100% of the time and provides perfect information regarding a caller's location regardless of the technology used," and "[t]he public makes no distinction between access methods or technologies when it comes to its expectation that 9-1-1 'will work' at its time of need."[36] Liability for negligent and intentional acts causing harm to others *is* a market force compelling responsible behavior.

Higher liability insurance premiums for failure to configure MLTS systems to provide transmission of 9-1-1 calls to the PSAP serving the caller's location, Direct Dialing, On-site Notification and Interior Location Information, as well as and potential civil liability, will do more to encourage compliance with the rules than all of the education and enforcement efforts the 9-1-1 community can provide.

To the extent the Commission imposes forfeitures for violation of the 9-1-1 rules, the forfeit amounts should be used for grants to PSAPs to improve 9-1-1 service. Congressional

[36] MESB Comments, at 3, 4.

authorization should be requested to permit the Commission to use such forfeitures for this purpose, whether grants are made by the Commission, the National 9-1-1 Office or some other federal office or agency.

The Commission should establish a capability for PSAPs to voluntarily upload files or forms, or complete forms online, to report MLTS systems from which they have received misrouted calls, calls without dispatchable location or where there is an indication the system is not compliant with Direct Dialing or On-site Notification requirements. The reports should be forwarded to appropriate Field Office of the Commission's Enforcement Bureau to investigate.

VI. The Commission Should Issue A Notice Of Proposed Rulemaking Proposing Forward-Looking 9-1-1 Location Rules.

Desktop computers, laptops, tablets, cell phones, and other devices are increasingly used for voice and video personal communications using native functionality or over-the-top applications, and it is foreseeable that this trend will continue. They may use Ethernet, WiFi, Bluetooth, CMRS and the Internet or PSTN. Even the Apple Watch now includes a cell phone service and GPS. These devices and the applications that run on them are increasingly location aware.

Location technologies used by these devices and the applications which run on them, including for purposes of 9-1-1 calling, appear to rely primarily upon GPS, and WiFi and Bluetooth access points or beacons at mapped locations. The trend towards smaller CMRS cells, and the transition to 5G may support additional and foreseeable 9-1-1 and commercial location services.

It is foreseeable that currently used and anticipated 5G location technologies will support 9-1-1 and commercial location functions for the foreseeable future. It is also clear that for mobile and nomadic devices, devices remotely connected to an MLTS or to cloud MLTS services,

location aware devices are the key to routing 9-1-1 calls to the PSAP serving the device's location, and providing the device location, including interior location information. Use of these technologies may even allow devices physically connected to an MLTS to provide their location in real-time when 9-1-1 is called, or automatically register and update their location in a PS-ALI type database. Making all devices which could be used to contact 9-1-1 location-aware would support geospatial routing, and most devices are becoming location aware due to consumer demand for location-aware applications anyway.

The Commission should thus propose rules that would require that GPS chipsets, as well as WiFi, Bluetooth, and other location technologies be incorporated in any desktop, laptop or tablet computer, cell phone, DECT phone or other wireless or cordless telephony device, softphone or wired telephone (using any physical media for connection), or other device intended for use for voice, video or text communications. While many of these devices already include the components required for use of these location and communication technologies; the Commission should develop a record in the NPRM of the marginal manufacturing and consumer cost of incorporating these devices into such devices, along with the native functionality to automatically activate the location aware devices when 9-1-1 is entered as the number or address for a voice call or text message, and transmit location information with a call or message.

In the case of a remote user connected to an MLTS, if the user seeks to dial 9-1-1 through the MLTS, it would appear the MLTS could (i) reject the call, forcing the caller to untether and place the call through a local network connection (or the device would recognize that it should untether to complete the call), (ii) route the call to a PSAP at an MLTS host location (if there is a host location) rather than the PSAP serving the caller's location, (iii) use a registered address which the user may or may not have updated to steer the call to the correct state 9-1-1 selective

router or ESInet gateway using the services of a provider such as Comtech, West or Bandwidth, or (iv) use real-time location data to steer the call to the correct state 9-1-1 selective router or ESInet gateway. If the device was connected to the MLTS via the Internet using tunneling IP and providing a VoIP session and is untethered, a new VoIP session could be established with a PSAP based upon registered location in the device, which may or may not have been updated. If a CMRS device, a wireless call could be connected through the subscribed provider's local service or roaming service arrangement, with device location determined in real time. If pursuant to forward-looking Commission rule, the user device provided native GPS capability, WiFi, Bluetooth, and CMRS wireless reception (for location purposes) and communications connectivity, and VoIP and text-messaging capability, then the device could (i) assess the options for connecting a 9-1-1 call whenever 9-1-1 was entered for a voice call or equivalent text address using a predetermined prioritization scheme, (ii) over-ride user preferences necessary to activate the location capabilities of the device, and (iii) connect the voice call or transmit the text message along with location data. A nomadic user of a DECT device connected to an MLTS in the MLTS customer's premises, a residential user of a dedicated VoIP device or desktop computer, or of a laptop computer or tablet in a hotel room could function in the same way.

Native CMRS capability of such devices would have to be activated only if service was initiated on the device, unless the requirement that CMRS providers accept 9-1-1 calls from non-initiated devices was to be continued indefinitely. CMRS provider acceptance of 9-1-1 calls from non-initiated devices has been a problem for PSAPs due to the unavailability of a call-back number, lack of adequate location information, and the fact that some parents give their old cellphones to their children as toys (with most children being taught at an early age how to dial 9-1-1).

The Commission appears to have retained the requirement for CMRS providers to accept 9-1-1 calls from non-initiated devices because of the distribution of donated used cellphones to residents of battered women's shelters, and the potential appearance of a prepaid wireless device which has run out of minutes as a non-initiated device when used to call 9-1-1. These concerns might be ameliorated to some extent if devices provide more accurate location data, more quickly, when used to contact 9-1-1. Use of old cellphones by children as toys would continue as a problem and tie up PSAP 9-1-1 trunks or concurrent sessions, dispatchers and potentially First Responders with false calls, but such false calls and fraudulent calls and callers would be more effectively interdicted due to the more timely and accurate provision of location information.

It is now possible to purchase CMRS devices with data-only plans, and use over-the-top applications to place voice calls. Representatives of BRETSA have received inquiries from users of such devices as to whether and how they can call 9-1-1. Requiring that devices include native voice (and text) capability, and that devices and over-the-top applications be designed so that 9-1-1 calls or texts use the native communications and location capabilities would assure a level of quality and consistency of experience for users. It would avoid confusion or delay if a user tried to place a 9-1-1 call using an outbound-only, chat or other app not permitting 9-1-1 calling. It would also avoid adding costs to what would otherwise be free or low-cost communications apps to provide 9-1-1 call or message routing, and limit the risk of poorly written apps. A requirement that devices include CMRS, WiFi and Bluetooth connectivity and voice or text capability, and use the same priority list and criteria to select the best option for connecting a voice call or sending a text message to 9-1-1, should reduce the costs or and perhaps lead to development of low-cost integrated components supplying these functionalities.

Mandating that the types of devices currently and foreseeably used for personal voice and text communications include native communications and location capability to place a 9-1-1 call or send a 9-1-1 text, and that over-the-top apps hand off calls addressed to 9-1-1 to such native functionality, would have an additional advantage. It would establish a common technological foundation and capability for cellular, broadband, MLTS and other network and phone system providers to develop, implement and improve 9-1-1 and ALI capabilities.

VII. Miscellaneous.

A. Outbound-Only Calling Systems.

Verizon states that direct dialing of 9-1-1 is not critical on an outbound-only system (without a callback number or capability for the PSAP to re-establish a dropped call), and a requirement for Direct Dialing or provision of a callback number or capability may incent enterprises not to enable any 9-1-1 calling at all.[37] Similarly, Microsoft argues that consumers do not have an expectation of calling 9-1-1 on outbound-only calling apps such as Skype, notwithstanding its report that 1,788 Skype users in Australia, the United Kingdom, Denmark and Finland, where emergency calling is enabled, called 9-1-1 (or its equivalent) in those countries in 2017 and 2018.

The threat that enterprises would not enable 9-1-1 calling at all would appear hollow, given public expectations and the potential civil liability to enterprises. Such action may also violate state law. Nevertheless, the Commission should meet the threat to not enable 9-1-1 calling at all by making clear that the Direct Dialing requirement of Kari's Law includes the requirement to make 9-1-1 calling available, and adopt a specific and clear requirement that any

[37] Verizon Comments at 3-4.

provider of telephony services or systems connected to the PSTN or public Internet make 9-1-1 calling available.

The lack of a callback number prevents a PSAP from reconnecting a call which has been dropped, such as due to poor wireless coverage; intentional disconnection by the caller, such as by a suicidal person; or intentional disconnection by a third party, such as a criminal who is assaulting the caller. The provision of a callback number is important, and MLTS should be required to provide a callback number when 9-1-1 is dialed. However it is better that an individual be able to connect to 9-1-1 to request assistance or report an emergency in the first place even if the PSAP cannot connect the call, than not be able to contact 9-1-1 at all.

Services which cannot provide a call-back number should educate and encourage users to use alternative services to contact 9-1-1. However if the only service available will not provide a callback number and/or location information, callers should be able to use the service to call 9-1-1.

In the MLTS context, if ALI information, especially Interior Location, and On-site Notification is provided, the lack of a call-back number would be mitigated to an extent. Unlike when 9-1-1 call is dropped by a non-initiated CMRS phone (with dropped calls more likely with CMRS than with MLTS and the possibility of the PSAP receiving only Phase I ALI for a dropped CMRS call), the PSAP should receive at least receive the street address for a dropped MLTS 9-1-1 call so that First Responders can be dispatched. PSAP receipt of the street address, potentially the interior location, and On-site Notification, should provide for expedited assistance to the caller.

It is counter-intuitive that 9-1-1 calling, *which is out-bound calling*, would not be available with an outbound-only service. 9-1-1 has been so successful with wireline service that

the general public expects that when they call 9-1-1, the PSAP will immediately know their location. This is the common experience of PSAPs, and indeed the stated objective of NG9-1-1 is that 9-1-1 be available anytime, anywhere, *from any device*. BRETSA is also concerned that voice application or service providers might configure their services to permit outbound-calling only for the specific purpose of avoiding the complications and expense of 9-1-1 compliance. There would not appear to be any technical reason outbound-only services cannot provide 9-1-1 calling, since Microsoft provides 9-1-1 calling with Skype in several countries, and it is unclear why Microsoft does not do so in the U.S.[38]

BRETSA's has proposed in Section VI above that all devices which can be used for voice or text communications be required to incorporate native GPS, CMRS, WiFi and Bluetooth connectivity and location capabilities, and voice and text communications capability. BRETSA has also proposed that apps use these native capabilities for any calls or text messages to 9-1-1. This would address concerns with outbound only calling apps or services which do not permit 9-1-1 calling.

B. The Commission Should Avoid "Lowest Common Denominator Requirements."

The American Hotel and Lodging Association ("AHLA"), users of MLTS, argue that the Commission should not require that (i) a callback number to the specific phone that was used to dial 9-1-1 be provided the PSAP because it "may not always be possible," and (ii) that dispatchable location include the guestroom number "because it will not be technologically

[38] Microsoft has not established that consumers in the U.S. do not expect to be able to call 9-1-1 on outbound-only services. 9-1-1 calls account for a very small percentage of all voice calls. Microsoft has also not established that the public in the countries where it has enabled 9-1-1 calling have the same general expectations regarding 9-1-1 as the public in the U.S.

possible in all cases." AHLA proposes that the Commission only require the street address be provided, and that more granular location information be "encouraged."[39]

AHLA thus proposes that the Commission adopt "lowest common denominator rules," calibrated to the least capable system in use. Such "rules" would be mere suggestions, and MLTS providers and customers can be expected to ignore suggestions and encouragement given that they have ignored *state statutory requirements* as reported by MESB.[40]

If it is technologically possible to include guestroom number in ALI data in some cases, it is technologically possible in all cases. It may just be more costly in some cases. Whenever rules of general applicability are adopted, meritorious applications for waiver must be seriously considered,[41] and as demonstrated in BRETSA's December 10, 2018 Comments herein at 3-5, and Section V above, State and local public safety officials and agencies should be the entities to consider and grant, grant with conditions or deny waiver requests.

C. Text-to-911.

AT&T states that text-to-911 via SMS cannot support dispatchable location, but that Real Time Text ("RTT") includes a voice component and can access specific caller location data including mid-call location updates.[42]

BRETSA has been concerned with the loss of text-to-911 coverage if SMS text is supplanted, rather than supplemented, with RTT. SMS provides text-messaging coverage beyond the range of CMRS voice coverage, and BRETSA is advised SMS will provide text-messaging coverage beyond the range of RTT text-messaging coverage. This is because the necessary field

[39] AHLA Comments at 3-4.
[40] MESB Comments, at 2-3.
[41] *WAIT Radio, supra*, 418 F.2d at 1157.
[42] AT&T Comments, at 11.

strength required to establish a connection and transmit an SMS message need exist for only a brief moment, while voice and RTT communications require a persistent connection.

There are areas of Colorado where residents have no wireline voice service in their mountain homes, cell coverage is insufficient to place voice calls, and they are able to communicate with the outside world only by SMS text message. There are apartment and office buildings in which CMRS voice calls cannot be made or received from some rooms and areas due to the lack of a sufficient signal, but SMS text messages can be sent and received. There are many areas of Colorado frequented by hunters, hikers, backpackers, cross-country skiers, snowmobilers, horseback riders, ATV riders, mountain-bikers, mountain climbers, 4-Wheelers and others, where CMRS voice calls cannot be connected but text messages can be sent and received. Lost and injured individuals have been rescued from such areas because they have been able to send SMS text messages, and the Commission's text-to-911 mandate has made direct text-messaging to PSAPs available in many areas where individuals were previously unable to cantact 9-1-1. If SMS text messaging, and thus text-to-911 is *replaced* with session-based RTT, it appears that all existing communications capability including text-to-911 capability in these areas will be lost.

The approval of an ESInet tariff in Colorado has caused BRETSA another concern. In Colorado, as in many states and regions where ESInet service is provided, ESInet pricing is based on the number of concurrent sessions provided a PSAP. The number of concurrent sessions is roughly equivalent to the number of 9-1-1 trunks subscribed to a PSAP in a legacy 9-1-1 system, including allowance for redundant and diversely-routed trunks and sessions. ESInet concurrent sessions are significantly more expensive than legacy 9-1-1 trunks.

It has been generally understood that about 300 SMS text messages can be transmitted in the same amount of bandwidth as one minute of voice. Acceptance of SMS text messages thus imposed relatively little cost for the volume of text-based calls-for-service which could be handled by a PSAP. SMS text-to-911 provided a means for the public to reach a PSAP during natural disasters, active shooter incidents and other large scale or large-impact events during which networks might be impeded or overloaded and 9-1-1 voice calls blocked. However session-based RTT, which has a voice component, will to BRETSA's understanding require the same amount of bandwidth as a voice call. Each "RTT session" will count as a concurrent session. Each RTT call a PSAP receives will reduce by one the number of concurrent voice calls a PSAP can receive, even though RTT calls might be processed almost as efficiently as SMS calls if the dispatcher reads and responds to the RTT messages as the caller completes a block of text, rather than as the characters arrive (as will be the case when a PSAP is in an overflow situation due to a large scale or large-impact event). Thus, supplanting rather than supplementing SMS with RTT will likely increase PSAP costs significantly, when providers already object to, and express concern with amount of, 9-1-1 fees.

As AT&T states, the interim SMS text-to-911 solution does not provide the robust location information that is possible with RTT. But the utility of control-channel based SMS (as opposed to emulated SMS), particularly in providing service beyond the range of voice and session based services and for 9-1-1, argues for continued provision of the service for the present. Better location solutions may now or soon be available due to technological advancements since the adoption of SMS text-to-911.

D. Test Calls.

AT&T states that "[a]s a best practice, customers should be encouraged to place test 911 calls from their systems to their PSAPs to ensure that accurate dispatchable location information is being transmitted."[43] Cisco states:

> Cisco recommends that the Commission initiate efforts to establish a standard testing protocol that is employed when installers configure MLTS for 911. Given the diversity and complexity of MLTS, a significant gap in testing protocols exists today. No responsible installer would configure an MLTS and then fail to place a test call to a public network to ensure the system is working properly. Yet, no standard protocol exists to allow that same installer to make sure that the emergency call configuration can work. Cisco is aware in some cases of well-intentioned installers who call a PSAP and announce they are making a "test call." Despite this warning, such calls often result in the PSAP dispatching emergency services anyways.[44]

BRETSA recognizes the importance of test calls, but also recognizes that test calls can tie-up PSAP 9-1-1 trunks or concurrent sessions, dispatchers and even First Responders, and prevent legitimate 9-1-1 calls from being answered during high call-volume periods. In the near term, it is essential that MLTS installers contact a PSAP on a ten-digit administrative line (*not* a 9-1-1 line) to coordinate testing to assure that tests are conducted when the PSAP is not dealing with high call-volumes and that First Responders are not dispatched.

BRETSA agrees with Cisco that over the long-term, a standard testing protocol should be created. Test-911 calls should not have to be connected to the local PSAP to confirm that a system is correctly configured for Direct Dialing, Internal Location Information is being provided with the call, and On-site Notification is being provided. Connection of the call to the OSP or the ESInet/NG9-1-1 Data Complex (such as a West ECMC) should be sufficient for test purposes. Thus, the Commission should work with OSPs and providers of ESInet/NG9-1-1 data complexes to establish a standard testing protocol which does not require or involve delivery of

[43] AT&T Comments, at 8.
[44] Cicso Comments, at 15.

the test call all the way to the PSAP. Indeed, it is the ESInet/NG9-1-1 Data Complex which will eventually provide geospatial routing of the call based upon the PIDF-LO payload. Commission involvement may be required because a test telephone number may need to be developed to avoid test calls being terminated to the PSAP, and to provide a single testing protocol for use by all MLTS, network providers, ESInet/NG9-1-1 Data Complex providers, and perhaps other device and CPE providers and end users.

Respectfully submitted,

BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

By: /s/
Joseph P. Benkert

Joseph P. Benkert, P.C.
8506 Porcupine Pointe
Parker, CO 80134-2786
(303) 948-2200

Its Attorney

January 30, 2019